Remarks

The final office action of December 1, 2003 has been reviewed and the Examiner's comments carefully considered. The Examiner's comments will be addressed in turn.

The examiner has objected to the drawings for two apparent omissions. The first alleged omission is that the drawings allegedly do not illustrate the angled portion of the projection having a pitch extending in the same direction as the internal threads. The examiners attention is directed to figure 1. Figure 1 clearly illustrates that the angled portion 42 forms a thread with a pitch in the same direction as the threads 18 of the cap. Please note that both the portion 42 and the threads 18 are slanted from left to right in the figure. A "thread" is formed by a helical ridge with the pitch of the thread referencing the pitch angle of the helix measured relative to a plane extending perpendicular to the axis of the helix. The drawings are accurate, and it is hoped that the claim amendments and comments will clarify this matter for the examiner.

The second objection to the drawings by the examiner is the illustration of the rib having a thickness greater than the thickness of the side. This feature is clearly supported and described in the specification. Regardless, the limitation has been cancelled from claim 29 and this objection is now believed to be moot.

The examiner has rejected the claims under 35 U.S.C. § 112, second paragraph for a several alleged informalities.

The examiner has suggested that "a one-way lead in thread" is indefinite. The applicant strongly disagrees with the examiner's comments. Although the term "thread" has multiple meanings in it's ordinary use, claims are not read in a vacuum. The claim terms must be given there broadest reasonable meaning in light of the specification. The term thread, within the meaning of the specification, is clearly that of a helical ridge or

projection used as a mechanical coupling. The claims have been amended to further highlight this fact, although further clarification was not believed to be required. The "one-way" modifier designates, as described in the specification, that the threaded portion of the projection can only act in one direction. Further, the term "lead-in" designates in which direction the thread on the projection is operable, namely placing the cap onto the container whereby the thread of the projection is a lead for the movement of the projection. The phrase "one way lead in thread" defines the structure of the projection as described in the specification and accurately defines the meets and bounds of the claimed invention to one of ordinary skill in the art.

The examiner also objects to the phrase "hoop-like characteristics". The term is clearly defined in the specification referencing any bead, rib or other projection that extends at least 360 degrees around the circumference. This definition has been added to the claims to avoid any confusion in the terms. The meets and bounds of the claims are clearly defined.

The examiner has rejected claims 1, 4, 6 and 8 as being anticipated by the teachings of U.S. Patent 5,727,705 to Kelly. The Examiner asserts that the Kelly patent teaches a closure with the claimed projection, or rib, with an angled portion as shown in Figure 2.

The Kelly patent is distinctly different from the present claimed invention. As discussed in the specification of the present application the "interference elements of tamper evident bands of the prior art can take several different shapes. An upward extending (i.e., extending toward the closed end of the container closure) integral continuous barb can be considered as the most effective shape for an interference element, but this shape is relatively difficult to efficiently manufacture. One solution addressing the manufacturing problem is to form the barb as a downwardly extending member as molded, which is folded up following the molding process. This solution is

found in U.S. Pat. Nos. 4,848,614; 5,090,788; 4,807,771; 4,546,892; 4,595,110; 5,725,115; 5,775,527; 5,913,437; 6,116,442; and 6,119,883." This solution is also what is represented in the Kelly patent as noted with the hinges 19. Additionally the Kelly patent does not suggest a common continuous rib extending at least 360° about the inside of the cap to exhibits hoop like characteristics. In contrast the Kelly patent provides that the interfering element is formed of a plurality of elements 5 connected to adjacent elements through flexible hinges 17 (see column 4 lines 27-20 of the Kelly Patent).

The objects of the present invention are achieved with an injection molded container closure in the form of a threaded flat cap having a top on one end of an annular side wall forming a closed annular structure. The cap further includes a tamper-evident portion on a lower portion of the side wall with the tamper-evident portion including a plurality of frangible leaders extending across a score line to a lower band. The lower band includes a continuous internal rib below the leaders having a lead in thread. The present invention also provides an injection mold for forming a mold part in the form of a closed annular structure having a continuous internal rib. The mold includes a pair of mold halves defining a mold cavity with one of the mold halves including a core forming the interior of the closed annular structure. The core is separated into a movable core portion and a remaining core portion at a separating line defined at the internal continuous rib. The moveable core is moveable away from the remaining core during ejection of the mold part following the molding process wherein a space is formed for the rib to move, or flex, into during the ejection process by the movement of the moveable core.

Independent claim 1 already defined a thread. The claims have been amended to further clarify the helical one way lead in thread being claimed. There is no such helical thread formed in Kelly. The examiner's attention is directed to the lead in end of the projection which is formed as a helical thread. Claim 8 further defines the thread structure on the projection of the tamper evident band which is simply not found in the Kelly patent.

The examiner has rejected claims 19-23 as being anticipated by the teachings of U.S. Patent 6,399,170 to Hock. The applicant's reserves the right to evidence a date of invention earlier than the effective date of the Hock patent.

The Hock patent does not completely describe the mold or molding process used in fabricating the cap disclosed therein. Regardless the cap is of a distinctly different design. The rib of the present claimed invention is internal to the side walls of the cap. The claims have been amended to bring this distinction out defining that "wherein substantially the entire length of the rib is positioned between the common top plane and the distal plane." The top and distal planes, as well as the score plane, are shown in the drawings and well known in the art. The majority of the prior art flat caps illustrate similar planes for the top of the cap, the end of the cap and along a score line extending around the cap. These terms are introduced into the claims to provide a reference for defining the internal rib (as well as the lead in thread pitch). Turning back to the rejection, contrary to the present invention as set forth in claims 19-23 that defines "substantially the entire length of the rib is positioned between the common top plane and the distal plane", the Hock patent teaches a rib extending from the distal end of the side wall extending well beyond the side wall. This structure does not present the same difficulties in molding, since the rib of Hock can effectively be molded as an extension of the side wall (the undercut on the rib of the Hock patent, as specifically shown in the drawings of the Hock patent, may present some difficulties in molding, but the concept of a rib that begins at the end of the sidewall and extends generally away from this terminal end of the side wall can formed as an extension of the sidewall). The claims define a distinctly different structure {that may effectively utilize a unique mold and molding process to efficiently produce and the applicant reiterates the desire to file divisional applications for these inventions as well}.

The examiner has rejected claims 1-3, 6 and 7 as being anticipated by the teachings of U.S. Patent 5,648,037 to Franchet et al. The Franchet et al. patent is no

more relevant to these claims than the Kelly patent discussed above. There is no teaching or suggestion of the one way lead in helical thread on the projection. A ramp is NOT a thread.

Finally the examiner rejects the subject matter of claims 1, 4-6, 9 and 24-29 in view of the combined teachings of the Hock patent in view of the Kelly patent. The deficiencies of each reference was discussed above and the combination of the references (e.g. adding leaders to the Hock reference as suggested) does not address any of the cited deficiencies.

Claims 1-9 and 19-29 remain in the application and favorable action of the claims, as amended, is respectfully requested.

Respectfully Submitted;

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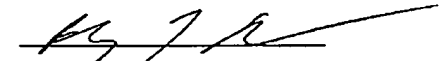

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